Terrorism and Economic Growth in Nigeria

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Abstract

Terrorism has emerged as a significant threat to global security and economic stability, with Nigeria experiencing its detrimental effects. This empirical study investigated the relationship between terrorism and economic growth in Nigeria. The study focused on the impact of terrorism on productivity in Nigeria, examining various aspects including economic growth, trade, foreign direct investment (FDI), manufacturing output, and other key indicators but with specific focus on economic growth. It highlighted the pervasive nature of terrorism in Nigeria, with various groups such as Boko Haram, ISIS, Fulani herdsmen, and Niger Delta militants contributing to violence and insecurity. The study reviews both empirical and theoretical literature on terrorism and its economic consequences, emphasizing the negative relationship between terrorism and economic growth. Using a positivist research paradigm, the study employed a Structural Vector Autoregression (SVAR) approach to analyze the impact of terrorism on economic variables in Nigeria. The SVAR model incorporated endogenous variables such as economic growth, capital, terrorism, and trade. Data covering a 42-year period from 1980 to 2021 were utilized, and they were sourced from the World Bank and World Development Indicators. The estimation and results section includes discussions on lag length selection criteria and impulse response analyses to understand the dynamic effects of terrorism on economic variables over time. In conclusion, the study underscored the detrimental impact of terrorism on productivity and economic growth in Nigeria, highlighting the need for effective counter-terrorism measures to mitigate these effects. It provides valuable insights for policymakers and researchers aiming to address the complex challenges posed by terrorism in the country.

Keywords: Terrorism, Economic Growth, Nigeria, SVAR.

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Introduction

There are few studies on violence in Nigeria, following the advent of a democratically elected government in 1999. From 1999 to date, the country has experienced various forms of violence, ranging from ethnic crises, youth restiveness, insurgencies, religious intolerance, kidnapping, wanton destruction of properties, banditry to outright terrorism. Farmers and rural dwellers are at the receiving end, leading to a fall in agricultural output. For over a decade, terrorist activities have claimed more than 40,000 lives, displaced over three million persons, kidnapped thousands and allegedly received billion of naira from states and individuals as ransom payments (Osmond, 2018). Despite renewed attention to the field, many things remain equivocal with what one may probably have already understood from the economics of terrorism. Hence, security processes are hindered, inhibiting productivity as thousands of dwellers, farmers and individual are displaced. Consequently, insecurity arising from terrorism remains a core area of concentration in both the internal and external growth and development of states' affairs (Osmond, 2018; Marc, Mogaka, and Verjee, 2015; Rogers, 2011).

The achievement of economic growth and development in any nation depends on several factors including the existence of peace and security. The existence of peace could foster the establishment of industries, creation of wealth, increase in Foreign Direct Investments (FDI), growth in the level of employment among others. Therefore, the economic progress of any nation can be negatively affected when insecurity which may manifest in different forms, magnitude and time becomes the order of the day. Terrorism which causes insecurity has been seen to have a strong negative relationship with economic growth (Osmond, 2018). By implication, the incessant increase in the level of terrorism reduces economic growth which by extension affects the level of unemployment, poverty, FDI, manufacturing output, and economic development.

Osmond (2018) revealed that the first case of terrorism[2] in Nigeria was recorded on the 17th day of January 1980 in Kaduna state. It further opined that the issue of terrorism has continued to increase in Nigeria ever since.

The activities of Boko Haram, ISIS, Fulani herdsmen and even the Niger Delta militants are all forms of terrorism which have led to reduction in the labour force of Nigeria. A lot of able-bodied Nigerians that could have contributed greatly to the growth and the development of the country have either been killed or kidnapped by these

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[2] *Enders and Sandler (2002) defined terrorism as the premeditated use or threat to use extra-normal violence or brutality by sub-national groups to obtain a political, religious or ideological objective through intimidation of a huge audience, usually not directly involved with the policymaking that the terrorists seek to influence.*

terrorists. Similarly, properties, investments and business ventures have been lost. The reports by the Global Terrorism data base (2015) have shown that the total number of lives lost due to the combined activities of terrorists from 1980 to 2014 is 9,217 and 4,095 people have been injured. Furthermore, the incidence of poverty has increased drastically in different parts of Nigeria especially in Bauchi, Adamawa, Brono, Gombe, Taraba, and Yobe. More than 50% of the population of the Northeast is considered to be poor (NBS, 2020).

Amidst the efforts of the government to fight terrorism, the incidence of terrorism continues to increase. The country is faced with issues of kidnapping, banditry, clashes, between herdsmen and farmers, armed robbery, and abductions of people for ransom. As a result, the levels of investments in the affected areas have reduced. According to Oluwole (2016), the effect of terrorism especially the activities of the Boko haram terrorists has led to a fall in the confidence of investors and has also reduced the FDI. Also, human capital has been lost and democracy is on the verge of collapse. It is, therefore, important to assess the impact of terrorism on economic activities in Nigeria considering its alarming nature in the country. In addition, according to the Internal Displacement Monitoring Centre (2020), from January 1, 2020 to December 31, 2020, 279,000 people have been displaced. Tribune Newspaper, December 1 2018 edition, also reported that over 100,000 people representing 10% of the population of Borno state have been killed in twelve years.

Terrorism has a substantial impact on critical sectors within the economy, including trade, foreign direct investment (FDI), manufacturing output (MAF), GDP growth (GDR), and remittances (REM) (Zakaria, Jun and Ahmed, 2019). Buttressing this, consider the following trends: Net trade witnessed a significant decline, plummeting from 53.27 in 2011 to 30.88 in 2014. This decline continued as it dropped to 21.33 in 2015 and further decreased to 20.72 in 2016, and eventually reaching a low point of 16.35 in 2020. Similarly, GDR exhibited a negative trend, decreasing from 5.31% in 2011 to 2.65% in 2015 and eventually falling to -1.79% in 2020. In parallel, FDI experienced a continuous downward trajectory, starting at 2.13 in 2011, and subsequently decreasing to 1.07 in 2013, 0.64 in 2017, and ultimately reaching 0.55 in 2020 (Zakaria, Jun and Ahmed, 2019).

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Figure 1: Trends of Terrorism Index, remittance, GDP growth, Gross national fixed investment, manufacturing output, foreign direct investment, and trade (Annual trend)
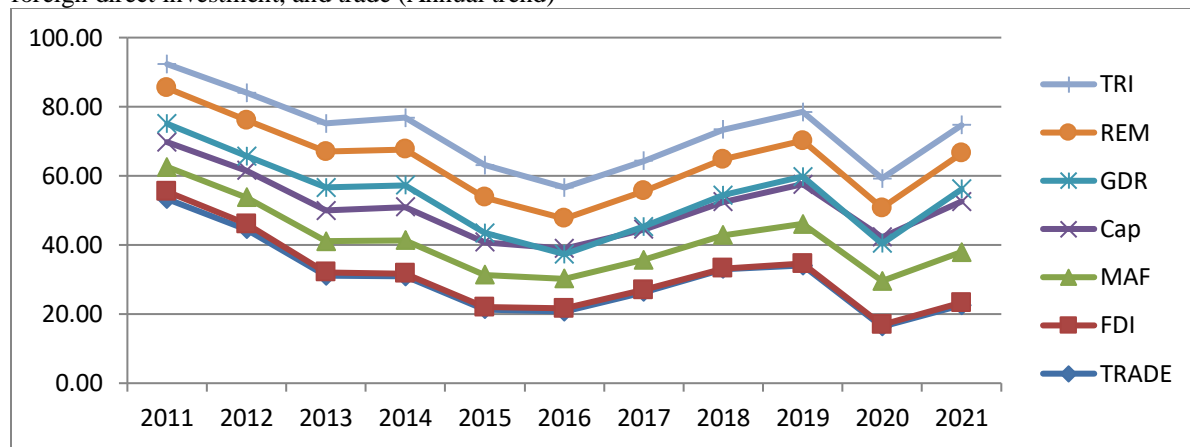
Source: Authors' computation from the data obtained from the World Bank (2024).

Figure 1 illustrates the annual trends of terrorism index, remittance, GDP growth, gross national fixed investment, manufacturing output, foreign direct investment, and trade.

Problem Statement/Justification

Terrorism is a common catastrophe that takes severe toll of Nigerians and some people from other countries of the world. The burden of terrorism in these countries especially in Nigeria has been growing and even further in recent years. Consequently, its cost is large when the burdens of terrorism are evaluated in economic terms. A cautious investigation of related literature on the subject matter shows that areas with prevalent terrorism are backward, have labour displaced, hence, resulting to low economic growth rates. Some of these regions to some extents have experienced a fall in living standard of its citizenry over the last few years. Terrorism has significantly affected the economic performance of these regions, imposing huge cost on both the current income and the rate of economic growth of a region, which may therefore affect the economic development of the region in the longrun.

Terrorism threatens the spatial peace of the affected regions and their environment. Its consequences could largely be detrimental to the social, economic, and political wellbeing of the people. Terrorism is a plague to the global peace and business environment as noted in the literature (Gaibulloev and Sandler, 2009; Mogaka, and Verjee, 2015; Dragonfly Terrorism Tracker, 2023). Furthermore, the literature concludes that the growth limiting impact of terrorism seems to be stronger on developing countries than that of the developed ones (Gaibulloev and Sandler, 2009). This necessitates this study been situated in the developing country like Nigeria that is characterized with huge accounts of terrorism in the last two decades and also falling among the ten countries in the world accounting for 85% of the total deaths from

terrorism in 2022 (Dragonfly Terrorism Tracker, 2023). Following this background, the question remains, to what extent is the impact of terrorism on productivity? This study, therefore, seeks to examine the impact of terrorism on productivity in Nigeria. The outcome of this study, among other things seeks to provide formidable framework/model for sustainable peace, investment, productivity and economic growth. It also serves as guide to future researchers and academics that may want to investigate terrorism, and economic growth.

Following this introduction, the remainder of the study is structured as follows: section two provides a comprehensive review of the existing literature related to terrorism and economic growth, section three delves into the theoretical framework underpinning the study, as well as detailing the research methodology employed, section four presents the findings derived from the estimations conducted, along with a detailed analysis of the results obtained, finally, section five summarizes the study's key findings and conclusions, while also offering pertinent policy recommendations based on the research outcomes.

Literature Review

There are several debates sprouting on terrorism among the academics and policymakers. As a result, the way terrorism manifests and how it may impact economic growth remains contentious both within the empirical and theoretical contexts. For instance, theoretical views on terrorism vary, but the orthodox wisdom suggests that a great magnitude of terrorism in the nation might largely account for economic disproportion and stunted economic growth. This section, therefore, reviews both the empirical and theoretical literature.

Empirical Literature Review

Terrorism is an aggression unjustly transferred by an individual or some groups against others. On the global sphere, Gaibulloev and Sandler's (2009) study on Asia over the period of 1970-2004 revealed that terrorism has a significant economic-declining implication. Specifically, the study concludes that terrorism leads to 1.5% decline in GDP per capita in Asia relative to per million people affected. Hence, terrorist activities affect volatile sectors and industries. Particularly, export, transportation, manufacturing and investment reducing GDP and economic growth.

Literature established that terrorism may impede growth. For instance, following William (2016), the fall in Afghan economy, between 2015 and 2016, was due to the issue of insecurity. The study further states that the chances of improvement were weak. Similarly, the Syrian economy was also characterized by a falling economy due to the crisis that confronted the nation. A total loss of USD202.6 billion was recorded at the end of the crises in 2014 (UNDP, 2014).

Iheonu and Ichoku (2021) examined the impact of terrorism on economic growth in Africa, using data from twenty-four African countries. They employed an instrumental variable fixed effects model, incorporating standard errors to account for cross-sectional dependence, serial correlation, and group-wise heteroskedasticity. Their study found a negative relationship between terrorism and economic growth in these countries.

In Nigeria, terrorism manifests in forms such as banditry, kidnapping, and suicide bombing, among others (Edmond & Henri, 2020). Various studies have demonstrated that the continuous rise of insecurity negatively impacts Nigeria's economic growth and development. Numerous empirical studies on the nexus between terrorism and economic growth, both domestic and international, indicate that terrorism can hinder the economic growth and development of countries. Supporting this claim, Akinyetun (2017) stated that terrorism is a type of insecurity that has threatened Nigeria's economic growth over the years. Similarly, Ewetan and Urhie (2014) argued that insecurity is detrimental to economic activities, thereby hindering local and foreign direct investments.

Akinyetun (2017) employed a qualitative and exploratory approach to examine terrorism's impact on national security, investment, economic growth, and development in Nigeria. The study concluded that effective counter-terrorism measures are necessary to increase investment and national security, which are key indicators of economic growth. While these studies provide insights into the potential impact of terrorism on GNFI, it is crucial to recognize that the relationship may vary depending on factors such as the severity and frequency of attacks, the resilience of the affected economy, and the effectiveness of government responses.

Alade, Mba, Aduku, and Chika (2021) used the generalized method of moments (GMM) estimator to examine terrorism's effect on economic growth in Nigeria from 1981 to 2019. They found a negative and insignificant relationship between terrorism and economic growth in Nigeria. The study also examined the impact of internal and external conflict on economic growth and found similar results. The findings imply that terrorism, in any form, negatively affects economic growth. These results align with Akinyetun (2017), suggesting that terrorism continuously undermines a country's economic growth and development.

Edeme and Nkalu (2019) used simultaneous equations to analyze the impact of terrorism on Nigeria's economic growth, finding a negative relationship. Their findings imply that the more forms terrorism takes, the slower the rate of economic growth.

Aghaulor (2020) investigated the impact of increasing insecurity on the Nigerian economy from 1981 to 2017. Using secondary data, they employed the Johansen cointegration test and found that the variables of interest were cointegrated, indicating a

long-run relationship. The Error Correction Model results showed that insecurity negatively affected economic growth and food security in Nigeria during the reviewed period.

Dibia (2021) investigated the effects of terrorism on peace and national development in Nigeria using a mixed approach of qualitative and quantitative methods. Utilizing secondary and primary data from a survey of 300 respondents with non-probability sampling techniques, the study used simple percentages, Pearson's coefficient of correlation, and linear regression analysis to show that terrorism affected peace and was a key factor influencing economic growth and development in Nigeria.

Examining the impact of terrorism on Foreign Direct Investment (FDI) which is an important determinant of economic growth, Ukwueze, Asogwa, Nwodo & Ogbona (2019) investigated the effect of terrorism on FDI in Nigeria. The study gathered data on terrorism index, quality of governance, and employed the autoregressive distributed lag model (ARDL). The study found terrorism to have a negative and significant impact on the FDI of Nigeria. That is, as terrorism rises, FDI falls and vice versa. A continuous fall in Nigeria's FDI as a result of terrorism is an indicator of a fall in economic growth in Nigeria.

Theoretical Literature Review

Terrorism has been given different theoretical views by various fields of studies. For instance, Mirza and Verdier (2008), and Naor (2006) offered associated theoretical considerations that argue how terrorism could negatively affect economic. According to them, terrorism is capable of distorting allocation of resources, majorly through the interruption, diversion and portfolio substitution channel. Furthering their view, they claim that terrorism could also influence resource accumulation negatively, majorly through demolition and dissaving channel. Empirical studies reveal that terrorism negatively affects FDI and international trade (Nitsch and Schumacher, 2004; Mirza and Verdier, 2008). Insecurity arising from terrorism remains a core area of concentration in both the internal and external growth and development of states' affairs.

Nonetheless this theoretical view, following Osmond (2018) and Saleem, Sidra, Rauf & Siddique (2020), this study adopts the rational behavior hypothesis (RBH) and strain theory propounded by Metron (1968) cited in Suleiman (2019). The strain theory is related to sociological school of thought that argues that deviant behaviour develops due to the consequence of the structures and cultural belief of the people in a society rather than being from pathological personalities. Furthermore, the theory explains that the occurrence of terrorism is based on the fact that members of the society are stratified. The stratification provides dissimilar access to the recognition and consciousness of their

shared values, preferences and goals. Among others, the goals include material possession, lands, educational attainment, traditional recognitions (Metron, 1968).

The strain theory further avows that people will certainly be nervous when their desired goals are not achievable due to the fact that the society does not offer satisfactory and accepted opportunity to do so. Impliedly, terrorist groups begin to emerge, and reinforce to fight for and claim their rights. The **RBH** sees the terrorists act as rational economic agents whose main goal is to only to commit crimes so as to achieve their anticipated goals, but to maximize their utility. The strain theory and **RBH** hypothesis are not just relevant to this study but they are convenient and have been largely used in the literature for studies related to terrorism and conflicts.

Methodology

Theoretical Framework

Rahi (2017) opines that the most appropriate research technique for describing valid research is to consider the research paradigm. Following this opinion, this study considers a positivist research paradigm[3]. This procedure is in general associated with quantitative research (Ryan, 2018). Positivists' paradigm is capable of evaluating and forecast the future with conviction when the cause-effect relation amidst phenomena is defined.

Terrorism may cause breakdown to education infrastructure, deteriorate school outcomes, low enrollment rates, and all have inverse impact on economic growth. Terrorism also destructs the human capital of a country. It limits trade and commercial action which is capable of restraining economic growth. Terrorism demolishes the human capital, hence, affects productivity of labour. According to Saleem, Sidra, Rauf & Siddique (2020) and **IMF** (2020), declining to investor confidence could prompt a generalized fall in prices of assets and a flight to quality that increases the cost of borrowing for riskier borrowers. These indicators, through terrorism, have harmful impact on economic growth.

Capital assemblage, its quality and quantity plays a crucial role in the economic growth. It enhances labour productivity. All things being equal, improvement in the quality and quantity of capital would expand production scale and level of specialization which consequently leads to increase in economic growth. This implies that:

$$\vartheta = f(\delta)$$

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[3] *The positivist paradigm argues that genuine occasions can be observationally watched and clarified with a coherent examination.*

Where, ϑ is economic growth and δ is capital   (3.1)

Terrorism also impacts growth. This is well discussed in the literature (Saleem, Sidra, Rauf & Siddique, 2020; Gries et al., 2011; Gaibulloev and Sandler, 2009; Bloomberg et al., 2004). Thus,

$$\vartheta = f(\delta, \tau) \qquad (3.2)$$

Where τ is terrorism

Trade, according to Saleem, Sidra, Rauf & Siddique (2020) is an indispensable part of economic growth. Following Siddique and Majeed (2015) and Siddique et al., (2018), trade helps in achieving efficiency in resources allocation, through exports, which consequently promotes economic growth. Thus,

$$\vartheta = f(\delta, \tau, \varphi) \qquad (3.3)$$

Where, φ trade.

The impact of FDI on economic growth is well discussed in the literature (Joshua, Rotimi, and Sarkodie, 2020; Joshua and Alola, 2020). According to these studies, FDI may enhance economic growth. Thus,

$$\vartheta = f(\delta, \tau, \varphi, \omega) \qquad (3.4)$$

Where ω is FDI

Other variables of interest considered in this study according to the literature (see Rotimi, Doorasamy, Joshua, Rotimi, Rotimi, Samuel, Kimea (2022) include remittance (r) and manufacturing output (q).

Equations 3.4 transforms to equation 3.5, being a functional form of the model,

$$\vartheta = f(\delta, \tau, \varphi, \omega, r, q) \qquad (3.5)$$

Considering the given equation (3.5), economic growth (ϑ) is the dependent variable. The independent variables are capital (δ), trade (φ), terrorism (τ), corruption (ω), remittance (r) and manufacturing output(q).

Model Specification

This study mainly seeks to estimate the impacts of terrorism on economic growth in Nigeria employing SVAR [4] approach. Therefore, this section briefly describes the methodology employed for the study. In the SVAR approach, approach, the brief description of the methodology that is used is described in this section. The model is a multivariate and linear representation of a vector of observable variables on its own lags and observable variables are assumed to be interdependent and endogenous, except where it is stated otherwise that one or more variables are assumed to be exogenous (see Rotimi and Ngalawa, 2017). Furthermore, their study also argues that SVAR model is a hybrid which may also be referred to as an economically interpretable overview of the VAR. The structural identification (factorization) restrictions are employed following economic theories and procedures.

SVAR Structure

Five endogenous variables consisting of economic growth (ϑ), capital (δ), terrorism (τ), trade (φ) and corruption (ω) are used to estimate the SVAR model.

Let us say that the Nigerian economy is expressed as the structural equation below:

$$\forall \theta_t = \beta_0 + \forall_1^* \theta_{t-1} + \cdots + \forall_p^* \theta_{t-p} + Y_0^* Z_t + \cdots + Y_q^* Z_{t-q} + Y \mu_t \qquad 3.6.$$

Where $\forall$ denotes an invertible 7×7 matrix that describes the synchronous or contemporaneous relationship among variables employed in the model, θ_t is a 7×1 vector of the endogenous variables, given that $\theta_t = \theta_{1t}, \theta_{2t}, \theta_{3t}, \dots, \theta_{nt}$. β_0 is a 7×1 vector of constant values, $\forall_1^* - \forall_p^*$ is a 7×7 matrix coefficients of lagged endogenous variables for every $i = 1 \dots p$. $Y_0^* - Y_q^*$ denote the coefficients of lagged exogenous variables and $Z_t, \dots, Z_{t-q}$ are vectors of lagged exogenous variables, both the Ys and Zs capture external shocks. Y is a 5×5 matrix whose non-zero "0" off-diagonal elements allow for direct impact of shocks on more than one endogenous variables employed in the system. μ_t is a vector of uncorrelated error terms structural disturbances.

$$\forall^{-1} \forall \theta_t = \forall^{-1} \beta_0 + \forall^{-1} \forall_1^* \theta_{t-1} + \cdots + \forall^{-1} \forall_p^* \theta_{t-p} + \forall^{-1} Y_0^* Z_t + \cdots + \forall^{-1} Y_q^* Z_{t-q} + \forall^{-1} Y \mu_t \qquad 3.7$$

This produces:

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[4] *The SVAR model means a linear multivariate representation of a vector of observable variables on its own lags.*

$\theta_t = \forall^{-1}\beta_0 + \forall^{-1}\forall_1^*\theta_{t-1} + \cdots + \forall^{-1}\forall_p^*\theta_{t-p} + \forall^{-1}Y_0^*Z_t + \cdots + \forall^{-1}Y_q^*Z_{t-q} + \forall^{-1}Y\mu_t$ 3.8

For convenience, let:

$\forall^{-1}\beta_0 = \delta_0$ 3.8.1.

$\forall^{-1}\forall_1^* = \forall_i$ 3.8.2. (for every $i = 1, ..., $ p)

$\forall^{-1}Y_q^* = \zeta_i$ 3.8.3. (for every $i = 1, ..., $ q)

$\forall^{-1}Y\mu_t = \xi_t$ 3.8.4.

Therefore, substituting $\mathbf{3.8.1 - 3.8.4.}$ into equation $3.8.$, the equation becomes:

$\theta_t = \delta_0 + \forall_1\theta_{t-1} + \cdots + \forall_p\theta_{t-p} + \zeta_1 Z_t + \cdots + \zeta_p Z_{t-q} + \xi_t$ 3.9

Equation 3.6 differs from 3.9. Equation 3.6 is known as a long form of SVAR and could not be directly estimated because of the response inherent therein in the VAR process[5] (see Enders, 2004; Rotimi and Ngalawa, 2017). On the other hand, equation 3.9 is known as a reduced form of SVAR such that none of the variables contemporaneously impact on one another directly in the model. Furthermore, the white noise (ξ_t) is a composite of shocks in θ_t (Enders, 2004).

Expressing 3.9 in a functional form as:

$\vartheta_t = f(\tau, \delta, \varphi, \omega, r, q)$ 3.10

Furthering (3.10), it can be expressed in a matrix form as:

$$\begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ \zeta_{21} & 1 & 0 & 0 & 0 & \zeta_{26} \\ \zeta_{31} & 0 & 1 & 0 & \zeta_{35} & 0 \\ 0 & \zeta_{42} & \zeta_{43} & 1 & 0 & \zeta_{46} \\ \zeta_{51} & 0 & \zeta_{53} & 0 & 1 & 0 \\ \zeta_{61} & \zeta_{62} & 0 & \zeta_{64} & 0 & 1 \end{bmatrix} \begin{bmatrix} \xi_t^\tau \\ \xi_t^\delta \\ \xi_t^\varphi \\ \xi_t^\omega \\ \xi_t^r \\ \xi_t^q \end{bmatrix} = \begin{bmatrix} \mu_t^\tau \\ \mu_t^\delta \\ \mu_t^\varphi \\ \mu_t^\omega \\ \mu_t^r \\ \mu_t^q \end{bmatrix}$$ 3.11

The terms $\xi_{it}^\tau, \xi_{it}^\delta, \xi_{it}^\varphi, \xi_{it}^\omega, \xi_{it}^r, \xi_{it}^q$ are residuals that have being expressed in their reduced forms. They constitute disturbance to the variables. They also constitute unexpected

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[5]*VAR process argues that endogenous variables have a synchronous and instantaneous impact on one another in the present and previous realization time path of θ_t.*

movements of each variable in the economy. $\mu_{it}^{\tau}, \mu_{it}^{\vartheta}, \mu_{it}^{\delta}, \mu_{it}^{\varphi}$ and μ_{it}^{ω} denote the structural shocks connected with the individual equation.

Identifying Restrictions

The SVAR model argues for the use of restriction especially to the concurrent structural parameters, but only for economically reasonable structures and situations. Buckle et al. (2007) laid the groundwork for the traditional SVAR approach, which serves as the basis for the hybrid structural identification approach. The primary adjustments to the Buckle et al. (2002) model involve incorporating identification methods that utilize the restrictions methodology. These restrictions narrow the focus to rotations that result in shocks aligning with expected signs in the responses of crucial variables (Dungey and Fry, 2009). The conventional restrictions are represented as "NA" (referred to as ζ_{ij} in equation 3.11) and "0" for concurrent and lagged relationships, respectively. A total of 36 zero constraints were applied to matrixλ, effectively restricting the covariance matrix of the reduced-form residuals. Matrix λ is the finite-order lag polynomial matrix that clearly illustrates how the structural restrictions are estimated, with the diagonal set to "$1.$" The ρ matrix is an orthogonal (uncorrelated) diagonal matrix. Six by six matrices are constructed using the $\lambda\rho$-model of Amisano and Gianini (2012), Kutu and Ngalawa (2016) to enforce short-term structural limitations on the model, as presented below:

$$\lambda = \begin{bmatrix} 1 & 0 & 0 & 0 & NA & 0 \\ NA & NA & 0 & NA & 0 & NA \\ NA & 0 & 1 & 0 & NA & 0 \\ 0 & NA & NA & 1 & 0 & NA \\ NA & 0 & NA & 0 & 1 & NA \\ NA & NA & 0 & NA & NA & 1 \end{bmatrix} = \rho = \begin{bmatrix} NA & 0 & 0 & 0 & 0 & 0 \\ 0 & NA & 0 & 0 & 0 & 0 \\ 0 & 0 & NA & 0 & 0 & 0 \\ 0 & 0 & 0 & NA & 0 & 0 \\ 0 & 0 & 0 & 0 & NA & 0 \\ 0 & 0 & 0 & 0 & 0 & NA \end{bmatrix} \qquad 3.12$$

Given that $\lambda = \rho$.

To achieve a clear-cut identification in this scheme, the study employs the approach advanced by Amisano and Giannini (1997), wherein the $SVAR$ requires that $2n^2 - n(n+1)(0.5)$ or 51 restrictions on the λ and ρ matrices collectively (where n denoted number of the variables). Given the assumption that ρ is a diagonal matrix, the study applies 30 exclusion restrictions to it, while demanding the imposition of 21 restrictions on the λ matrix to realize exact identification of the system. As the non-recursive SVAR enforces 14 zero restrictions on λ, the system becomes over-identified, requiring the estimation of 16 free parameters in the λ matrix and 6 in the ρ matrix, as specified in equation 3.12.

The interplay between variables is determined by the by economic theory and it is further influenced by their role within the identification framework. For instance,

according to this framework, domestic variables are assumed not to influence the international variables, and the transmission of international shocks to the domestic economy can occur speedily, as observed in Berkelmans (2005). Non-zero coefficients in the matrices suggest that one variable immediately impacts the other.

Data, Data Sources and Measurement

The quarterly time series data covering a period of 44 years from 2011 to 2021 are employed in this study. Beside data availability and efforts to stay current, the study period and cut-off dates are dictated by prevalent terrorism experiences in Nigeria. The data are obtained from World Bank, and World Development Indicators (WDI). The choice of the selected variables align with the literature (see Saleem, Sidra, Rauf, and Siddique, 2020; Zakaria, Jun and Ahmed, 2019; Fareed, Meo, Zulfiqar, Shahzad and Wang, 2018). Furthermore this study adopts the SVAR model similar to Rotimi and Ngalawa (2017) and Kutu and Ngalawa (2016). Unlike the Rotimi and Ngalawa (2017) that consider a group of oil exporting countries, this study is limited to country using SVAR. SVAR is capable of capturing the interaction of necessary economic variables in Nigeria. The data employed includes trade openness (Trade), foreign direct investment (FDI), manufacturing output (MAF), gross national fixed investment (CAP), gross domestic product (GDP) growth rate (GDR), remittance (REM) and terrorism index (TRI). The trade openness is employed to measures the degree of trade to shocks arising from terrorism. Similarly, FDI, MAF, CAP and REM account for shocks arising from terrorism. FDI and REM are expressed in logarithm. MAF, CAP and GDR are expressed in rate while TRI is given in index.

This study aligns with earlier studies like Vonnak (2005), Ibrahim and Amin (2005), Uhlig (2005), Peersman and Smets (2005), Fève and Guay (2006), and Elbourne (2008), among others, who have focused on estimating SVARs and VARs in their original levels. These studies argue that employing this approach helps avoid potential efficiency loss or the loss of critical information that can occur when differencing SVARs and VARs. Another advantage of this approach is its ability to generate consistent parameter estimates, whether the underlying time series are integrated or not, enhancing the robustness of the results compared to cointegrated SVAR or VAR models (see Afandi, 2005).

Furthermore, Berkelmans (2005) advocates for incorporating lagged variables in SVARs or VARs, as it can render the residuals stationary even when dealing with integrated time series I(1). Studies like Sharifi-Renani (2010), Mordi and Adebiyi (2010), Farzanegan (2011), Ncube and Ndou (2011), and Ngalawa and Viegi (2011) have also adopted this methodology.

Non-Stationarity Test

This study adopts a methodology consistent with prior researches (see Rotimi and Ngalawa, 2017; Elbourne, 2008). These studies advocate for estimating Structural Vector Autoregressions (SVARs) and Vector Autoregressions (VARs) in levels and differences. This approach is believed to prevent efficiency loss and retain crucial information about the data sets. It ensures consistent parameter estimates regardless of whether the time series are integrated or not, thus producing more robust results compared to cointegrated SVAR or VAR models (Kutu and Ngalawa 2016; Afandi, 2005). Additionally, including lagged variables in SVARs or VARs, as proposed in Kutu and Ngalawa (2016) and Berkelmans (2005), helps to maintain stationarity in residuals even when dealing with integrated time series (I(1)).

Presentation and Discussion of Results

Table 1: *Descriptive Statistics*

	CAP	FDI	GDR	MAF	REM	TRADE	TRI
Mean	14.31992	1.414953	3.069167	14.31992	8.30E+09	32.07667	8.446364
Median	13.93340	1.078745	3.921555	13.93340	1.19E+09	33.87182	8.500000
Maximum	21.09825	5.790847	15.32916	21.09825	2.43E+10	53.27796	9.310000
Minimum	6.552817	-1.150856	-13.12788	6.552817	2424527.	9.135846	6.950000
Std. Dev.	5.036123	1.285813	5.322386	5.036123	9.75E+09	12.55065	0.658366
Skewness	-0.028369	1.464995	-0.843228	-0.028369	0.452566	-0.283660	-0.814431
Kurtosis	1.408465	5.855484	4.740206	1.408465	1.306264	2.108843	3.558176
Jarque-Bera	4.332679	29.29260	10.27679	4.332679	6.454008	1.953021	1.358845
Probability	0.114596	0.000000	0.005867	0.114596	0.039676	0.376623	0.506910
Sum	587.1165	59.42803	128.9050	587.1165	3.49E+11	1347.220	92.91000
Sum Sq. Dev.	1014.501	67.78588	1161.440	1014.501	3.90E+21	6458.276	4.334455
Observations	42	42	42	42	42	42	42

Source: Authors' Computation (2024).

Table 1 presents the summary statistic for the series employed in this study for the period under consideration, namely, gross national fixed investment (CAP), foreign direct investment (FDI), GDP growth (GDR), manufacturing output (MAF), remittance (REM), trade openness (TRADE), and terrorism index (TRI). The mean is the average value of the data series. The study primarily examined the impact of terrorism on economic growth, as its aim. The maximum and minimum values of economic growth 2.43E+10 and 2424527.0 respectively. The mean value of economic growth is 8.30E+09, indicating that the mean is skewed towards the upper end of the distribution. The close proximity of the series range and its mean to the maximum economic growth suggests that terrorism has had a significant impact on economic growth. This implies that the terrorism experienced during the period under review has markedly affected economic performance, potentially hindering economic progress. The standard deviation for

economic growth is 9.75E+09, indicating a highly dispersed distribution. This implies that economic growth in Nigeria may have been unstable during the period investigated.

Also, the maximum and minimum values of terrorism index are 9.3100 and 6.9500 respectively. The mean value of the terrorism index is 8.446364, showing that the mean is skewed towards the upper end of the distribution. Similarly, the close proximity of the series range and its mean to the maximum terrorism index suggests that terrorism is significant in impacting economic growth.

Table 2: *Stationarity Test*

Variables	Level			First Difference			Orde of integration
	ADF	Critical Value @5%	P-value	ADF	Critical Value @ 5%	P-value	
GDR	-2.7955	-2.9369	0.0679	-11.867	-2.9369	0.0000	1(1)
MAF	-1.3062	-2.9369	0.6174	-7.1469	-2.9389	0.0000	1(1)
CAP	-1.3062	-2.9369	0.6174	-7.1469	-2.9389	0.0000	1(1)
FDI	-4.1375	-2.9350	0.0023	-8.4109	-2.9369	0.0000	1(0)
REM	-0.5552	-2.9350	0.8694	-5.3721	-2.9369	0.0001	1(1)
TRADE	-2.7916	-2.9350	0.0683	-8.1665	-2.9369	0.0000	1(1)
TRI	-3.2005	-3.2126	0.0509	-2.4984	-3.2598	0.1460	1(0)

Source: Authors' Computation (2024).

The initial step in this analysis involves examining the characteristics of our series. To accomplish this, we adopt the methodology outlined by Rotimi and Ngalawa (2017), which entails conducting stationary tests to assess the presence of unit roots. The results of the unit root tests as presented in Table 2, employing the Augmented Dickey-Fuller (ADF) test, reveal that Foreign Direct Investment (FDI) and the Trade Restrictions Index (TRI) demonstrate stationarity at their levels. Conversely, other variables such as Gross Domestic Revenue (GDR), Manufacturing Output (MAF), Capital (CAP), Remittances (REM), and Trade exhibit stationarity only subsequent to their first differencing. This suggests that these variables display a mixed order of integration. Despite this mixed order of integration, given the focus on the impact of terrorism, which is regarded as a shock, the analysis employs Structural Vector Autoregression (SVAR).

Table 3: *Correlation Matrix*

	GDR	CAP	FDI	MAF	REM	TRADE	TRI
GDR							
CAP	-0.2582						
FDI	0.4825	-0.5464					
MAF	-0.2582	0.8102	-0.5464				
REM	0.2281	-0.2557	-0.2665	-0.2557			
TRADE	0.5986	-0.5951	0.747	-0.5951	0.3734		
TRI	-0.7326	0.1764	-0.7386	-0.1764	0.02357	-0.75	

Source: Authors' Computation (2024).

Table 3 displays the covariance and correlation among the variables utilized in the estimation process. It illustrates that the variables, GDR, CAP, FDI, MAF, REM, TRADE, and TRI demonstrate diverse forms of relationships with each other. While certain variables display positive correlations, others exhibit negative relationships. However, particular emphasis is placed on the correlation between terrorism and economic growth, which serve as the primary variables of interest. The correlation between terrorism and economic growth is found to be negative (-0.7326). The finding reveals a high correlation between the variables. This indicates that as terrorism increases, economic growth decreases and vice versa. Furthermore, when the magnitude of the correlation is low, it suggests a weak relationship between terrorism and economic growth.

There exists a slightly weak positive correlation (0.4825) between Gross Domestic Revenue (GDR) and Foreign Direct Investment (FDI), implying that as GDR increases, FDI tends to increase as well. Similarly, GDR demonstrates a positive correlation (0.5986) with TRADE, indicating a strong relationship where higher GDR is associated with increased trade. Conversely, GDR exhibits a negative correlation (-0.3326) with TRI, suggesting an inverse relationship between GDR and TRI.

Capital (CAP) displays a negative correlation (-0.2582) with GDR, suggesting that higher capital is associated with lower GDR. It also shows a negative correlation (-0.5464) with FDI, indicating that higher capital is linked to lower FDI. Notably, CAP demonstrates a perfect positive correlation (1) with MAF, indicating multicollinearity between these variables. Foreign Direct Investment (FDI) indicates a strong positive correlation (0.747) with TRADE, implying that higher FDI is associated with increased trade. Additionally, FDI shows a strong negative correlation (-0.7386) with TRI, suggesting that higher FDI is linked to lower TRI.

Manufacturing Output (MAF) displays a perfect positive correlation (1) with CAP, again suggesting multicollinearity. It also exhibits a negative correlation (-0.5464) with FDI, indicating that higher MAF is associated with lower FDI.

Remittances (REM) demonstrates a positive correlation (0.2281) with GDR, suggesting a weak positive relationship. Additionally, REM shows a positive correlation (0.3733) with TRADE, indicating that higher remittances are associated with increased trade.

Trade is positively correlated with GDR (0.5986), suggesting that higher trade is associated with increased GDR. Conversely, it exhibits a negative correlation (-0.5951) with CAP, indicating that higher trade is linked to lower capital. TRADE also displays a strong positive correlation (0.747) with FDI, suggesting that higher trade is associated with increased FDI, and a strong negative correlation (-0.75) with TRI, indicating that higher

trade is linked to lower TRI. Trade Restrictions Index (TRI) demonstrates a negative correlation (-0.3326) with GDR, indicating that higher TRI is associated with lower GDR. It also shows a strong negative correlation (-0.7386) with FDI and TRADE (-0.75), suggesting that higher TRI is linked to lower FDI and trade.

Table 4: *Optimal Lag Length Selection Criteria*

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-465.773	NA	3.25e-17	-24.7341	58.0323	9.1272
1	1016.29	26.2873	4.62e-17	-24.8672	2.8589	7.4494
2	1412.93	18.1884*	5.65e-17*	-28.8183*	1.8198*	2.0874*
3	1411.66	31.3621	4.75e-17	-27.8341	13.1143	3.2248
4	1417.77	618.258	6.91e-17	-22.7840	10.299	2.3533
8	2148.592	23.26076	7.82e-19	-24.70325	9.10814	6.64300

Source: Authors' Computation (2024).

Optimal lag selection entails determining the appropriate lag length for a model, with the preferred lag being the one with the lowest Akaike Information Criterion (AIC). A lower AIC value indicates a more reliable model. This process is crucial in autoregressive techniques (Rotimi and Ngalawa, 2017). Asghar and Abid (2007) note that selecting the lag length in ARIMA modeling is one of the most challenging aspects. However, Rotimi and Ngalawa (2017) assert that, guided by empirical studies and theoretical principles, proper lag length determination ensures no serial correlation in the residuals.

Various lag selection criteria, including the Akaike Information Criterion (AIC), Final Prediction Error (FPE), and Sequential Modified LR test, collectively indicated that a 2-lag length is optimal for model adjustment and ensuring well-behaved residuals. Similarly, the Schwarz Information Criterion (SC) and the Hannan-Quinn Information Criterion (HQ) favored 2 lags for the SVAR model. Our decision to choose the 2-lag length aligns with the more comprehensive model recommended by the AIC, FPE, and Sequential Modified LR tests. This choice offers several advantages. It facilitates accurate and robust dynamics without excessively truncating the estimation sample, which could compromise confidence levels. Additionally, this lag length ensures the absence of serial correlation in the residuals. Our decision is supported by prior studies, such as those by Sharifi-Renani (2010) and Elbourne (2008), which also adopted a similar structure in their analyses.
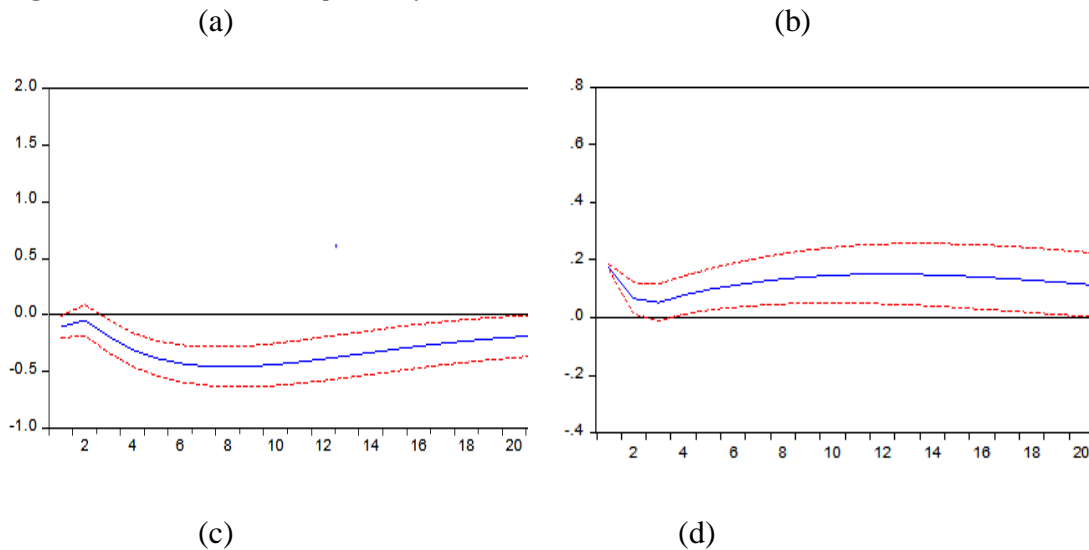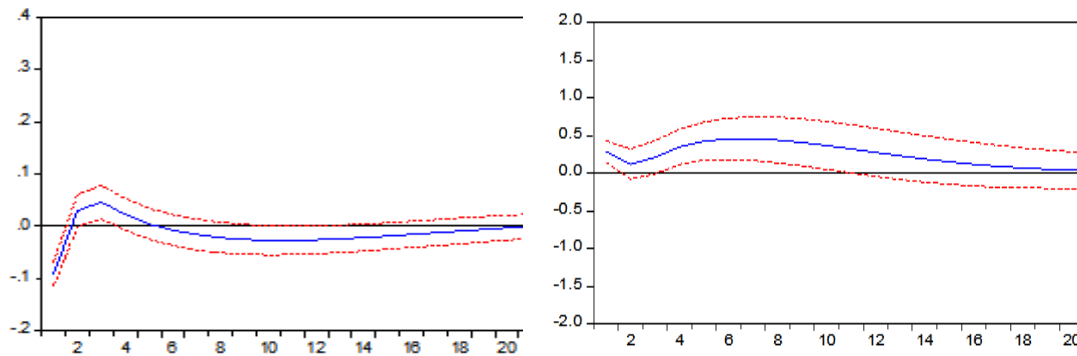
Impulse Response Analyses

Impulse Response of GDP Growth Rate to Terrorism

As noted earlier, the study's objective is to investigate whether or not terrorism shocks affect the country's economy, specifically, whether or not such shocks significantly impact

GDP growth. This is presented in figure 4.2(a). The result shows that **GDP** negatively and significantly responds to one structural standard deviation innovation in terrorism shocks. Although, contrary expectation, the **GDP** growth rate initially rose up to period 2 before it begins to decline gradually, and this continues until period 10 before it slowly begins to rise. This indicates that positive variation in terrorism leads to negative change in **GDP** growth, as evidenced in figure 4.2(a). The continuous fall up to period 10 is statistically significant and even as it proceeds into period 20. This finding further suggest that the effects of terrorism shocks may not be immediately vary simultaneously with **GDP** growth. Contrary to common view that terrorism would immediately affect **GDP** and its growth, this finding shows otherwise that the effect of terrorism on the economy would be much felt later in the future. The initial growth observed within period 2 could be as a result of positively trending **GDP** before terrorism shocks. It could also be associated with the lag element introduced to **GDP** growth rate, suggesting that the lagged variable may result in a sluggish response to fluctuations evolving from its explanatory variables. This is line with Greene (2003), Ngalawa and Rotimi (2017), Saleem, Sidra, Rauf and Siddique (2020). buttressing these claims, such economic adjustment costs could result from the inability of the economy to respond quickly to shocks; they are temporary and are believed to dissipate over a time frame.

Figure 2: *(a, b, c, and d). Responses of Variables to Terrorism*

(a)   (b)

(c)   (d)

Source: Authors' Computation (2024).

Impulse Response of FDI to Terrorism

In terms of the response of FDI to interest rates to one structural standard deviation innovation in terrorism, figure 4.2(b) reveals that interest rates significantly respond to oil price shocks over time. The response of FDI to a structural one standard deviation innovation is negative, declining sharply in response to terrorism. Specifically, FDI decline continuously up to period 2 and bottoming at period 3. These findings support the submission that FDI could be significantly affected negatively by terrorism due to its impact on economic stability, investor confidence, and risk perception. While there isn't an exhaustive consensus on the precise relationship between terrorism and FDI, and various studies have attempted to explore this complex dynamic. This study reveals a decline in the first three periods and gradually rises and peaking 13th period and begins to significantly decline again. This trending could be associated to government intervention. Early intervention may encourage investors to sustain their investments and even invest more, thus leading to an increase in GDP growth and vice versa. Furthermore, thus economic stability and risk perception could influence investor's decision on investment. Thus, terrorism often leads to increased uncertainty and perceived risk in a country's investment environment. Therefore, investors may become hesitant to commit capital to regions prone to terrorist activities due to concerns about potential disruptions to business operations and safety of investments. This trend and finding of this study also align with Blomberg, Hess, and Weerapana (2014) who found that terrorist incidents are associated with a decrease in FDI inflows. They argue that heightened security risks and uncertainty surrounding future attacks deter foreign investors, particularly in industries vulnerable to disruptions.

Impulse Response of Manufacturing output to Terrorism

With regard to the impulse response of manufacturing output to terrorism, the results show that except in the first two period, manufacturing output is not significantly responsive to one structural standard deviation innovation in terrorism. Manufacturing

output sharply rises in the first and second periods in response to the innovation in terrorism and attains its peak in the third period. It later declines, bottoming in period ten (see figure 4.3(c)). The initial increase may be associated with the rational expectations hypothesis[6].

While the literature on the direct impact of terrorism on manufacturing output may be limited, this study demonstrates how terrorism can indirectly affect the manufacturing sector through supply chain disruptions, changes in consumer demand, and government responses. buttressing these claims, the impact of terrorism on manufacturing output can vary depending on factors such as the severity of the attacks, the resilience of the economy, and the effectiveness of government responses. Aligning with McKinnon and Wilhemsen (2003), the trending of the impulse response could be situated in the context of Supply Chain Disruptions: Terrorism can disrupt supply chains, leading to production delays, inventory shortages, and increased costs for manufacturers. Attacks on key infrastructure or transportation networks can hinder the movement of raw materials and finished goods, impacting manufacturing output. Furthermore, it aligns with Albercht and Argote-Cabanero (2010), and Kaur and Singh (2014) who asserts that investor confidence and demand- terrorism can erode consumer and investor confidence, leading to a decline in demand for manufactured goods. Heightened security concerns and economic uncertainty following terrorist attacks can dampen consumer spending and business investment, negatively impacting manufacturing output.

Impulse Response of Gross National Fixed Investment (GNFI) to Terrorism

Figure 4.2(d) presents the response of GNFI to terrorism. Similar to the responses of other variables, GNFI is significantly responsive to a structural one standard deviation innovation in terrorism. The GNFI declines slightly in period one and later rises and peaks at period seven. After this, it starts declining and becomes insignificant after period twelve up until period twenty.

Aligning with Blomberg et al. (2014), Iheonu and Ichoku (2021), the impact of terrorism on Gross National Fixed Investment (GNFI) is a complex and multifaceted issue that has been explored in academic literature. While there is no consensus, several studies suggest that terrorism can have a negative effect on investment, as found by this study, due to increased uncertainty, higher risk perceptions, and potential disruptions to economic activity (see figure 4.2(d)).

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[6] The rational expectations hypothesis states that individuals base their decisions on three major factors: their past experiences, the information available to them, and human rationality.

On increased uncertainty, terrorism creates uncertainty about the future, leading investors to postpone or cancel investment decisions. For instance, a study by Blomberg, Hess, and Orphanides (2014) found that terrorist incidents are associated with a significant decrease in investment. Similarly, on higher risk perceptions, terrorism raises the perceived risk of doing business, particularly in regions prone to attacks. This could lead to higher borrowing costs and reduced investment (Abadie and Gardeazabal, 2003). terrorist attacks, terrorist attacks disrupt supply chains, damage infrastructure, and disrupt economic activity, leading to lower investment levels. This study validates Drakos and Kutan (2003) that terrorist incidents in Turkey had a negative impact on investment in the country. Government responses to terrorism, such as increased security measures or military spending, can divert resources away from productive investment. A study by Nitsch and Schumacher (2004) found that higher military spending following terrorist attacks can crowd out private investment in affected countries.

Key Findings

Terrorism significantly impacts economic growth. The correlation between terrorism and economic growth is found to be negative (-0.7326). Furthermore, the finding reveals a high correlation between the variables. This indicates that as terrorism increases, economic growth decreases and vice versa.

Conclusion and Policy Recommendations

This study estimated a six variable SVAR model to investigate the impact of terrorism on economic growth in Nigeria. The study used annual data for the period spanning 1980-2021 to construct this model. The variables considered in the study include Trade Openness (Trade), Foreign Direct Investment (FDI), Manufacturing Output (MAF), Gross National Fixed Investment (CAP), GDP Growth rate (GDR), Remittance (REM), and Terrorism index (TRI). Terrorism is treated as an exogenous variable while the other variables are endogenous variables. The study revealed that economic growth responds negatively and significantly to terrorism. Similarly, the results show that foreign direct investment negatively and significantly responds to terrorism. Manufacturing out, though insignificant negatively responded to terrorism and lastly, the study finds that national fixed investment (GNFI) negatively and significantly responds to terrorism. This concludes that terrorism impede economic growth. Moreover, this research emphasizes the negative effects of terrorism on productivity and economic growth in Nigeria, stressing the importance of implementing efficient counter-terrorism strategies to lessen these impacts. It offers valuable perspectives for policymakers and researchers seeking to tackle the multifaceted challenges posed by terrorism in the nation.

References

Abadie, A., & Gardeazabal, J. (2003). The economic costs of conflict: A case study of the Basque Country. American Economic Review, 93(1), 113-132.

Aghaulor, K. C. (2020). Growth impact of Insecurity on the Nigerian Economy. *UJAH: Unizik Journal of Arts and Humanities, 21*(3), 147-171.

Akinyetun, T. S. (2017). Economic consequences of terrorism in Nigeria: Implications for national development cum national security. *Global Journal of Economics and Finance, www. gjefnet. com, 1*(1).

Alade, O. B., Ifeoma, M. B. A., Aduku, E. B., & Ameh, C. A. (2021). Terrorism, human capital development and economic growth in Nigeria. *International Journal of Economics Development Research (IJEDR), 2*(2), 142-155.

Albrecht, J. W., & Argote-Cabanero, J. (2010). The Impact of Terrorism on Consumer Sentiment: Evidence from the Madrid Train Bombings. Applied Economics Letters, 17(17), 1721-1726.

Blomberg, S. B., Hess, G. D., & Orphanides, A. (2004). The macroeconomic consequences of terrorism. Journal of Monetary Economics, 51(5), 1007-1032.

Blomberg, S. B., Hess, G. D., & Weerapana, A. (2014). Economic Conditions and Terrorism. European Journal of Political Economy, 20(2), 463-478.

Dibia, I. I. (2021). THE EFFECTS OF TERRORISM ON PEACE AND NATIONAL DEVELOPMENT IN NIGERIA. *Journal of Public Administration, Finance and Law, 10*(22), 315-338.

Drakos, K., & Kutan, A. M. (2003). Regional effects of terrorism on tourism in three Mediterranean countries. Journal of Conflict Resolution, 47(5), 621-641.

Edeme, R. K., & Nkalu, C. N. (2019). Growth and fiscal effects of terrorism in Nigeria. In *The Impact of Global Terrorism on Economic and Political Development*. Emerald Publishing Limited.

Enders, W., & Sandler, T. (2002). Patterns of transnational terrorism, 1970–1999: Alternative time-series estimates. *International Studies Quarterly, 46*(2), 145-165.

Ewetan, O. O., & Urhie, E. (2014). Insecurity and socio-economic development in Nigeria. *Journal of sustainable development studies, 5*(1).

Iheonu, C. O., & Ichoku, H. E. (2021). Terrorism and economic growth in Africa: understanding the role of military expenditure. *Behavioral Sciences of Terrorism and Political Aggression*, 1-15.

International Monetary Fund. (2001). World Economic Outlook-the Global Economy After September 11, December 2001: A Survey by the Staff of the International Monetary Fund, World Economic and Financial Surveys. Washington, DC: IMF.

Kaur, H., & Singh, T. (2014). Impact of Terrorism on Indian Economy: An Empirical Analysis. Asian Journal of Research in Business Economics and Management, 4(7), 175-191.

McKinnon, A. C., & Wilhemsen, L. (2003). The Impact of the September 11 Attacks on Global Supply Chains. Transportation Research Part E: Logistics and Transportation Review, 39(5), 455-470.

Nitsch, V., & Schumacher, D. (2004). Terrorism and international trade: An empirical investigation. European Journal of Political Economy, 20(2), 423-433.

Osmond, O. N. (2018). Economic Analysis of Terrorism in Nigeria. *Global journal of arts humanities and social sciences 6*(10), 50-58.

Rauf, A., Siddique, H. M. A., Saleem, Q., & Sidra, S. (2020). Terrorism and international tourism nexus: evidence from Pakistan. *International Journal of Economics and Financial Issues, 10*(5), 387.

Rotimi, M. E., & Ngalawa, H. (2017). Oil price shocks and economic performance in Africa's oil exporting countries. *Acta Universitatis Danubius. Œconomica, 13*(5).

Rotimi, E. M., Obasaju, B. O., Lawal, A., & Iseolorunkanmi, J. (2013). Analysis of corruption and economic growth in Nigeria. *Analysis of corruption and economic growth in Nigeria, 4*(4.2), 1-19.

Rotimi, M. E., IseOlorunkanmi, O. J., Rotimi, G. G., & Doorasamy, M. (2022). Re-examining corruption and economic growth nexus in oil dependent economy: Nigeria's case. *Journal of Money Laundering Control, 25*(3), 526-539.

Saleem, Q., Sidra, S., Rauf, A., & Siddique, H. M. A. (2020). Impact of Terrorism on Economic Growth in South Asian country. *International Journal of Economics and Financial Issues, 10*(4), 185.